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(54) Spirit level

(57) A spirit level with two spirit vials (12, 14) set at right angles to each other.

So that the spirit level can have a further mode of use, enabling the testing of a horizontally extending, e.g. a wire or cord, line to be easily carried out, the level is provided with a removable line level unit (18) with a slot (24) for engaging the line. The unit 18 is retained in a cavity 16 in the main body of the spirit level, e.g. by magnetic means or by a slide lock. The main body may also have magnetic means for attaching itself to a surface to be tested.

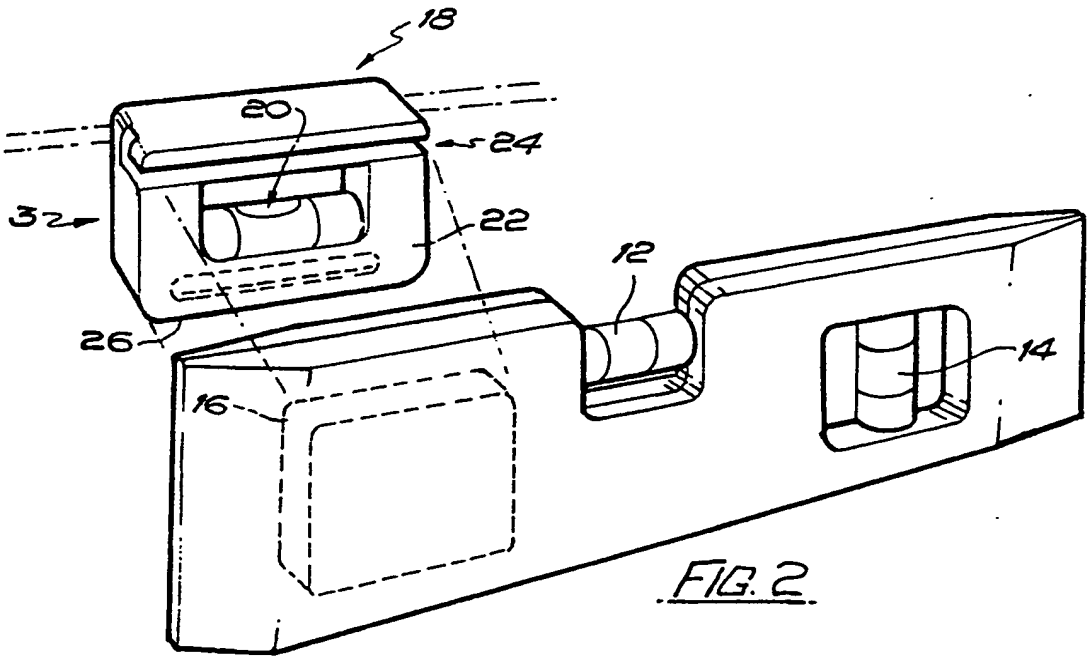

FIG. 2

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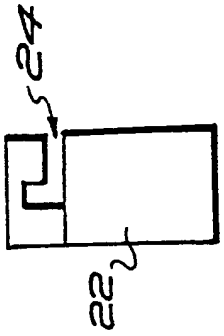


FIG.3.

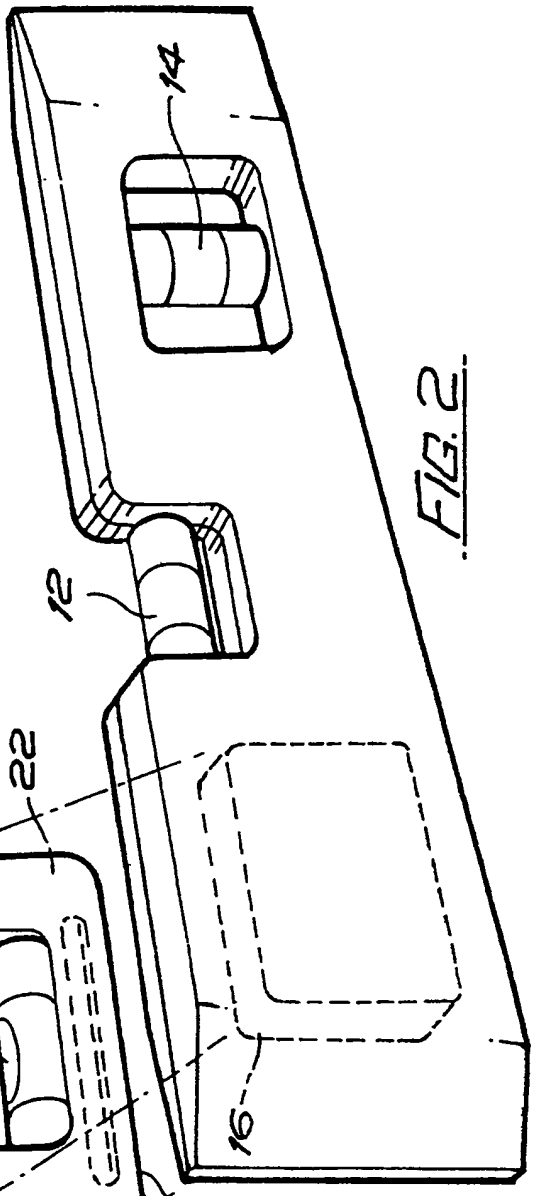


FIG.2.

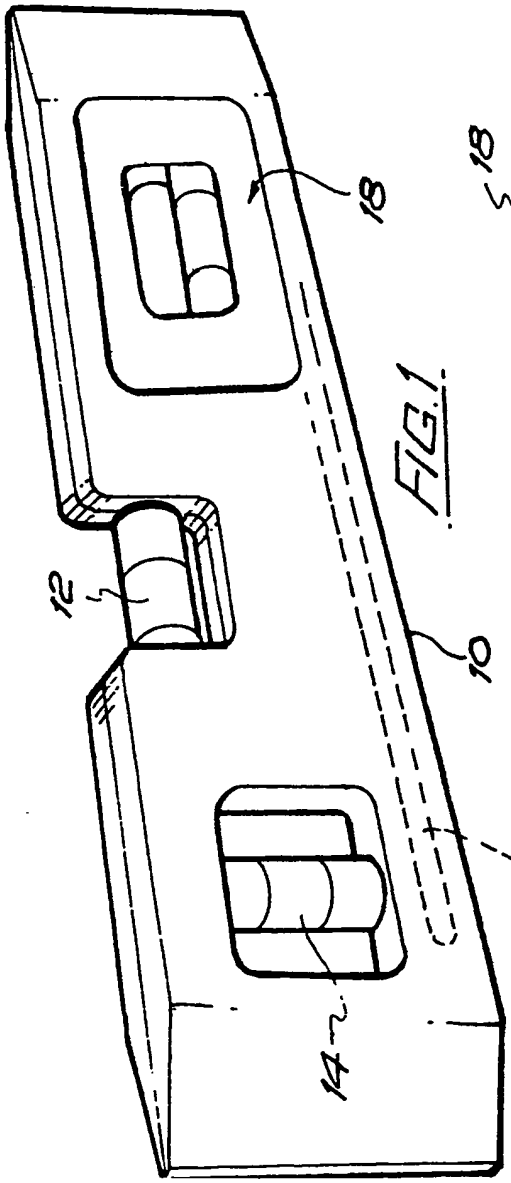
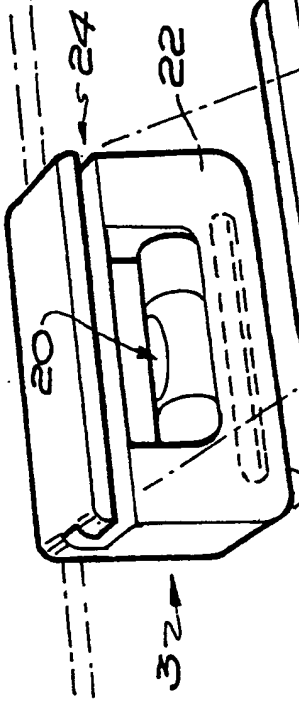


FIG.1.



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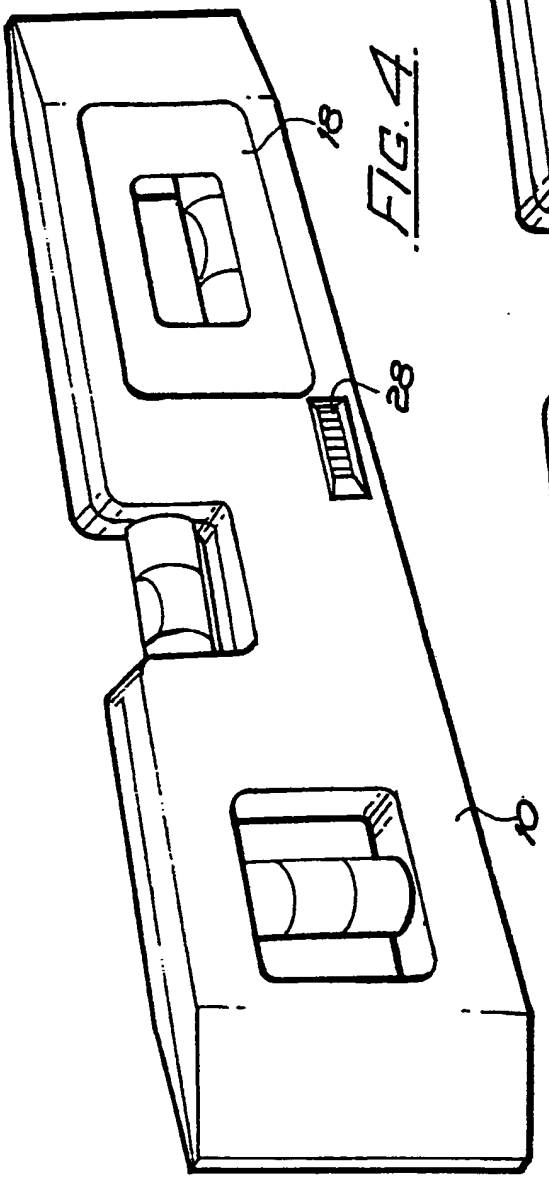

FIG.4

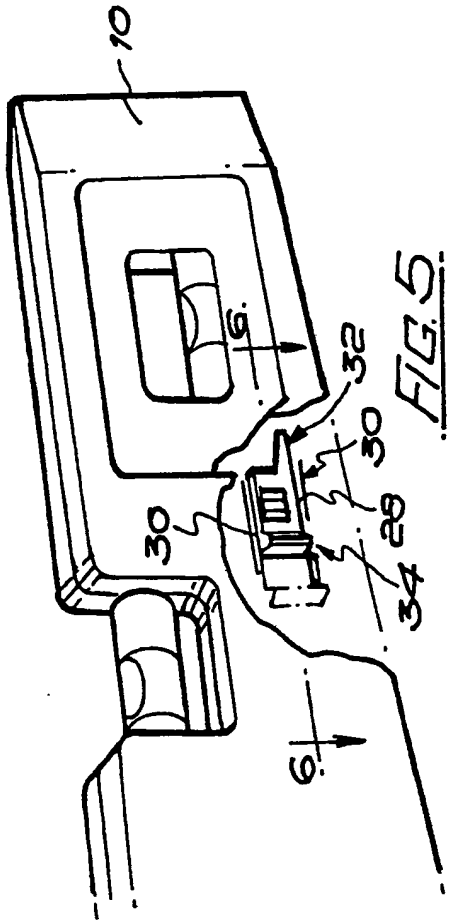

FIG.5

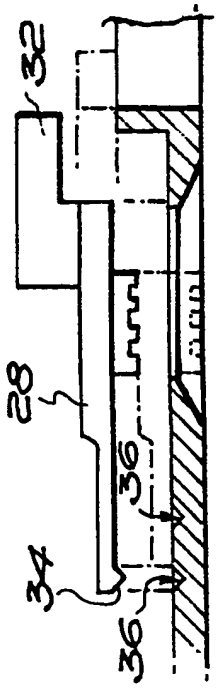

FIG.6

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Spirit level.

The invention relates to a spirit level of the kind which might be used by engineers for example.

Various constructions of spirit level are known. For example, it is known to provide a spirit level body with two spirit vials set at right angles to each other for testing, respectively, horizontal and vertical surfaces.

The invention has for its object to provide a spirit level which will have a further mode of use, this enabling the testing of a horizontally extending line to be easily carried out.

According to the invention, there is provided a spirit level with a main body part having at least one fixed spirit vial for testing horizontal surfaces, said main body in addition having a cavity for receiving a line level unit capable of being used separately from the main body part, the line level unit having a spirit vial contained in an auxiliary body part, the latter being formed with a longitudinally extending slot opening from one side of the body for its engagement with a horizontally extending line. The main body part will preferably have two spirit vials set at right angles to each other, the two vials being for

testing, respectively, horizontal and vertical surfaces. The main body part and the auxiliary body part will preferably both be provided with magnetic strips extending along their lower surfaces so that they can be removably attached to the surfaces of ferrous objects. The line level unit will preferably be retained in position within the cavity in the main body part by means of a manually operable slide lock element.

In order that the invention may be fully understood and readily carried into effect, the same will now be described, by way of example only, with reference to the accompanying drawings, of which:-

Figure 1 is a perspective view on one side of a spirit level embodying the invention,

Figure 2 is an exploded perspective view on the other side of the level,

Figure 3 is a view of a part of the level in the direction of arrow 3 in Figure 2,

Figure 4 is a view similar to Figure 1 and illustating a possible modification which will be described,

Figure 5 is a partly broken away scrap view of a part of the modified spirit level, and

Figure 6 is an exploded scrap view on the line 6-6 in Figure 5 and drawn to a somewhat larger scale than Figures 1 to 5.

Referring now to Figures 1 to 3 the drawings, the spirit level there illustrated includes a main body part 10 with two spirit vials 12 and 14 set at right angles to each other for testing, respectively, horizontal and vertical surfaces. In addition, a cavity 16 which opens from one side of the main body part contains a line level unit, generally indicated 18, which can be used separately from the main body part.

As shown, the line level unit 18 has a spirit vial 20 contained in an auxiliary body part 22, the latter being formed with a longitudinally extending slot 24 opening from one side of the body. The line level unit is thus able to be engaged with a horizontally extending line (that is to say a thin wire or cord) as indicated by the chain-dotted lines in Figure 2 and is able to be left hanging there whilst any adjustments to the line are carried out. The line level unit is small and of relatively light weight and can therefore readily be used in this fashion.

The main body part 10 and the auxiliary body part 22 are both provided with magnetic strips 26

extending along their lower surfaces so that they can be removably attached to the surfaces of ferrous objects. A further advantage resulting from the presence of the magnetic strips is that when the line level unit is in place in the cavity 16, as shown in Figure 1, the magnetic strips mutually attract each other and this has the effect of retaining the line level unit in position in the main body part until shaken out for use.

Thus there is provided a spirit level which not only has two spirit vials set at right angles to each other for testing, respectively, horizontal and vertical surfaces, but which has a further mode of use, this enabling the testing of a horizontally extending line to be easily carried out. However, various modifications may be made. For example, in Figures 4 to 6 there is illustrated a modification involving the provision of a manually operable slide lock element 28 by means of which the line level unit 18 can be retained in position within the cavity in the main body part until required for use. As shown in Figure 5, the interior of one of the two mouldings which together form the main body part 10 has been formed with guide surfaces 30 along which the slide lock element 28 can be moved. The other of the two mouldings has an aperture

through which a serrated portion of the slide lock element can project, as shown, to be acted on by finger pressure. One end of the slide lock element is provided with a projecting lug 32 which can be engaged with the line level unit to retain it in position within the cavity 16; the other end is provided with a flexible tail element having a projection 34 which as the slide lock element is displaced in one direction and then the other can snap into engagement with one or the other of a pair of depressions 36 formed within the main body part. The locking and unlocking of the line level unit is thus brought about with a positive snap action so that inadvertent unlocking is unlikely to occur.

Various other modifications may be made and it will be understood that the invention could be incorporated in a spirit level the main body part of which had only a single spirit vial for testing horizontal surfaces.

CLAIMS:

1. A spirit level with a main body part having at least one fixed spirit vial for testing horizontal surfaces, said main body in addition having a cavity for receiving a line level unit capable of being used separately from the main body part, the line level unit having a spirit vial contained in an auxiliary body part, the latter being formed with a longitudinally extending slot opening from one side of the body for its engagement with a horizontally extending line.

2. A spirit level according to claim 1, in which the main body part has two spirit vials set at right angles to each other, the two vials being for testing, respectively, horizontal and vertical surfaces.

3. A spirit level according to either one of the preceding claims, in which the auxiliary body part is provided with a magnetic strip extending along its lower surface so that it can be removably attached to the surfaces of ferrous objects.

4. A spirit level according to claim 3, in which the main body part is also provided with a magnetic strip extending along its lower surface

so it can be removably attached to the surfaces of ferrous objects.

5. A spirit level according to any one of the preceding claims, in which the line level unit is retained in position within the cavity in the main body part by means of a manually operable slide lock element.

6. A spirit level constructed, arranged and adapted to be used substantially as hereinbefore described with reference to and as illustrated by Figures 1 to 3 or Figures 4 to 6 of the accompanying drawings.